Primordial, Origin of Life & Protocell Conservation and Scaling Model:

A deep time, transdisciplinary bridge to enhance human factors research methodology, increase discovery and science output in astrobiology and origin of life research.

Daniel Lappin, BA, CMP, Interogenesis Designs. Daniel@Interogenesis.com, 415-936-9981

'Expanding the search to include the possibility of life 'not as we know it' requires further technical and conceptual maturation, including advances in statistical methods, scaling laws, information theory, and probabilistic approaches.'

Origins, Worlds, and Life: A Decadal Strategy for Planetary Science and Astrobiology 2023-2032 (2023) (Chapter 14, Question 11: Search for Life Elsewhere, p.368)

Conclusion) Based upon the prebiotic cascade to the protocell described by the Jack Szostak lab (Harvard, Howard Hughes Medical Institute) and protocell origination hypothesized by Prof. Bruce Damer (*Hot Spring Hypothesis for an Origin of Life,* Astrobiology, 2019, Damer), a conceptual maturation is proposed for Origin of Life (OOL) and astrobiology research methods by the hypothesis of this abstract. Based upon a deep time scaling, transdisciplinary scoping review (Lappin, 2024) it is proposed: A) that the human body contains multiple observable conserved OOL physiology structures and mechanisms of action, in evolved form, such as the vestibular system. B) that historic global arts, humanities and sciences contain examples of the Protocell Model, suggesting that that the Protocell Model is conserved, scaled and expressed across time in human civilizations. It is concluded that the structures and mechanisms of action of the Protocell Model can be applied as a 'multi-intelligences, subject agnostic' method in origin of life and astrobiology research, as a 'human factors, experiential, reverse engineering, remembering, descending ladder physiology method' to access and inquire into internally conserved OOL information in the human body – used in tandem with direct observation and measurement methods of external materials. It is proposed this will enhance and diversify ideation and hypothesis formation into primordial pre-protocell states, as well as analysis, system thinking, problem solving, creativity; and plausibly increasing discovery & science output, and reducing the risk of missed discovery in the extreme mystery domains of OOL and astrobiology– promoting research efficiency in a budget sensitive era.
Premise 1) The Lappin scoping review describes the conserved Protocell Model as [redacted] This constitutes a primordial unit of force, action, and measurement, and a system of communication, signalling and information. When scaled across evolution The Protocell Model contributes to subsequent principles of instrument, inquiry, measurement, information-communication-symbol-Sign-language, anatomy-physiology, attention regulation, cognition, biological work, and simple machines in the modern human.
Premise 2) the Protocell Model is conversed and expressed in multiple forms of arts &, humanities, and sciences disciplines across historic global cultures. For example, two anatomy-physiology illustrations from the European Middle Ages (circa 1400) support this assertion. The classification of human mammals as bilaterally symmetric, from the taxonomy of Carl Linnaeus (1758, Modern Era) does not reflect the Protocell Model as suggested by the Middles Age illustrations. Human physiology is reflective of the Protocell Model and is more sophisticated than a bilaterally symmetric organism. Refining the bilateral taxonomy of humans is a conceptual shift in research methodology.
Premise 3) The evolution of precision measurement methods of the external environment arising at the transition from the European Middle Ages to the Modern Era, i.e. scientific revolution, (circa 1500 CE-1945 CE), advanced the precision aspects of the human brain and endocrine system. (Lappin, 2024). (3A) Hypothetically, the cultural phenomena of precision physiology reduced cultural awareness and practice of system biology principles that reflect the Protocell Model, such as the role of the human skin (membrane) in measurement and communication in science. With the progression of precision, science research became less reflective of the originating Protocell Model. It is proposed that this contributes to a mono-culture, inefficiency, & missed discovery. (3B) Internal physiology inquiry methods from the European Middles Ages were poorly integrated into the science culture of external material, direct observation of the Modern Era. (Lappin, 2024)
Premise 4) Existing research and clinical practice in Integrated Health, Western Healthcare and medical sciences, such as Osteopathy, Interoception, & Savant research, parallels the concept of an internal protocell method for astrobiology and OOL. (Lappin, 2024) This supports a non-traditional method for astromaterial sample analysis as called for by a recent NAS Space Studies Board report.